查询V111DHB34供应商



# DHB34 Varistor Series

NEW

The DHB34 Series of transient surge suppressors are industrial high-energy Metal-Oxide Varistors (MOVs). They are designed to provide surge suppression in the AC mains outdoor and service entrance environment (distribution panels) of buildings. DHB34 applications also include industrial heavy motors, controls, and power supplies such as used in the oil-drilling, mining, and transportation fields, including HVAC and motor/generator applications.

The DHB34 Series provides rigid terminals for through-hole solder mounting on printed circuit boards, thereby eliminating the need for screw mounting.

See Ratings and Specifications table for part numbers.

## Features

- Wide Operating Voltage Range $V_{M(AC)RMS}$ . . . . . 110V to 750V
- High Energy Absorption Capability. . . . . $W_{TM}$ = 220J to 1050J
- High Peak Pulse Current Capability . . . . . $I_{TM}$ = 40,000A*
- Rigid Terminals for Secure Through-Hole Solder Mounting
- No Derating Up to 85°C Ambient

**AGENCY APPROVALS:** Recognized under the components program of Underwriters Laboratories. Certified by CSA.

**AGENCY FILE NUMBERS:** UL 1449, E75961, UL1414, E56529, CSA LR91788.

* NOTE: Ratings are for each individual varistor element in a dual assembly.

# DHB34 Varistor Series

**Absolute Maximum Ratings** For ratings of individual members of a series, see Device Ratings and Specifications chart

| | DHB34 SERIES | UNITS |
|---|---|---|
| Continuous: | | |
| Steady State Applied Voltage: | | |
| AC Voltage Range ($V_{M(AC)RMS}$) | 110 to 750 | V |
| DC Voltage Range ($V_{M(DC)}$) | 148 to 970 | V |
| Transient: | | |
| Peak Pulse Current ($I_{TM}$) | | |
| For 8/20µs Current Wave (See Figure 2) | 40,000 | A |
| Single Pulse Energy Range | | |
| For 2ms Current Square Wave ($W_{TM}$) | 220 to 1050 | J |
| Operating Ambient Temperature Range ($T_A$) | -55 to 85 | °C |
| Storage Temperature Range ($T_{STG}$) | -55 to 125 | °C |
| Temperature Coefficient (αV) of Clamping Voltage ($V_C$) at Specified Test Current | <0.01 | %/°C |

*CAUTION: Stresses above those listed in "Absolute Maximum Ratings" may cause permanent damage to the device. This is a stress only rating and operation of the device at these or any other conditions above those indicated in the operational sections of this specification is not implied.*

## Device Ratings and Specifications

| MODEL NUMBER | SIZE | MAXIMUM RATINGS (85°C) | | | | SPECIFICATIONS (25°C) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | CONTINUOUS | | TRANSIENT | | VARISTOR VOLTAGE AT 1mA DC TEST CURRENT | | | MAXIMUM CLAMPING VOLTAGE ($V_C$) AT 200A (8/20µs) | TYPICAL CAPACITANCE |
| | | $V_{RMS}$ | $V_{DC}$ | ENERGY (2ms) | PEAK CURRENT (8/20µs) | | | | | |
| | | $V_{M(AC)}$ | $V_{M(DC)}$ | $W_{TM}$ | $I_{TM}$ | MIN | $V_{N(DC)}$ | MAX | $V_C$ | f = 1MHz |
| | (mm) | (V) | (V) | (V) | (A) | (V) | (V) | (V) | (V) | (pF) |
| V111DHB34 | 34 | 110 | 148 | 220 | 40,000 [1] | 156 | 173 | 190 | 288 | 11,600 |
| V131DHB34 | 34 | 130 | 175 | 270 | 40,000 [2] | 184 | 200 | 228 | 345 | 10,000 |
| V141DHB34 | 34 | 140 | 188 | 291 | 40,000 [3] | 198 | 220 | 248 | 375 | 9,000 |
| V151DHB34 | 34 | 150 | 200 | 300 | 40,000 [4] | 212 | 240 | 268 | 405 | 8,000 |
| V181DHB34 | 34 | 180 | 240 | 330 | 40,000 | 254 | 282 | 310 | 468 | 6,800 |
| V201DHB34 | 34 | 200 | 265 | 350 | 40,000 | 283 | 314 | 345 | 533 | 6,350 |
| V251DHB34 | 34 | 250 | 330 | 370 | 40,000 | 354 | 390 | 429 | 650 | 5,000 |
| V271DHB34 | 34 | 275 | 369 | 400 | 40,000 | 389 | 430 | 473 | 730 | 4,500 |
| V301DHB34 | 34 | 300 | 410 | 430 | 40,000 | 433 | 478 | 526 | 780 | 4,100 |
| V321DHB34 | 34 | 320 | 420 | 460 | 40,000 | 462 | 510 | 561 | 830 | 3,800 |
| V331DHB34 | 34 | 330 | 435 | 475 | 40,000 | 467 | 519 | 570 | 843 | 3,750 |
| V351DHB34 | 34 | 350 | 460 | 500 | 40,000 | 495 | 550 | 604 | 894 | 3,600 |

NOTE: Ratings are for each individual varistor element in dual assembly.

1. Average power dissipation of transients not to exceed 2.0W per varistor element (2 varistors per device).
2. 40kA capability depends on applications rated up to 115$V_{RMS}$. 30kA applies if > 115 $V_{RMS}$.
3. 40kA capability depends on applications rated up to 123$V_{RMS}$. 30kA applies if > 123 $V_{RMS}$.
4. 40kA capability depends on applications rated up to 132$V_{RMS}$. 30kA applies if > 132 $V_{RMS}$.
5. 40kA capability depends on applications rated up to 97$V_{RMS}$. 30kA applies if > 97 $V_{RMS}$.

# DHB34 Varistor Series

## Device Ratings and Specifications

| MODEL NUMBER | SIZE | MAXIMUM RATINGS (85°C) | | | | SPECIFICATIONS (25°C) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | CONTINUOUS | | TRANSIENT | | VARISTOR VOLTAGE AT 1mA DC TEST CURRENT | | | MAXIMUM CLAMPING VOLTAGE ($V_C$) AT 200A (8/20μs) | TYPICAL CAPACI-TANCE |
| | | $V_{RMS}$ | $V_{DC}$ | ENERGY (2ms) | PEAK CURRENT (8/20μs) | | | | | |
| | | $V_{M(AC)}$ | $V_{M(DC)}$ | $W_{TM}$ | $I_{TM}$ | MIN | $V_{N(DC)}$ | MAX | $V_C$ | f = 1MHz |
| | (mm) | (V) | (V) | (V) | (A) | (V) | (V) | (V) | (V) | (pF) |
| V391DHB34 | 34 | 385 | 510 | 550 | 40,000 | 545 | 604 | 663 | 1,000 | 3,500 |
| V421DHB34 | 34 | 420 | 560 | 600 | 40,000 | 610 | 680 | 748 | 1,130 | 3,000 |
| V441DHB34 | 34 | 440 | 585 | 630 | 40,000 | 622 | 691 | 759 | 1,147 | 2,900 |
| V481DHB34 | 34 | 480 | 640 | 650 | 40,000 | 670 | 750 | 825 | 1,240 | 2,700 |
| V511DHB34 | 34 | 510 | 675 | 700 | 40,000 | 735 | 820 | 910 | 1,350 | 2,500 |
| V551DHB34 | 34 | 550 | 710 | 755 | 40,000 | 778 | 864 | 949 | 1,404 | 2,390 |
| V571DHB34 | 34 | 575 | 730 | 770 | 40,000 | 805 | 910 | 1000 | 1,480 | 2,200 |
| V661DHB34 | 34 | 660 | 850 | 900 | 40,000 | 940 | 1050 | 1160 | 1,720 | 2,000 |
| V681DHB34 | 34 | 680 | 875 | 925 | 40,000 | 962 | 1068 | 1173 | 1,777 | 1,900 |
| V751DHB34 | 34 | 750 | 970 | 1050 | 40,000 | 1080 | 1200 | 1320 | 2,000 | 1,800 |

NOTE: Ratings are for each individual varistor element in dual assembly.

1. Average power dissipation of transients not to exceed 2.0W per varistor element (2 varistors per device).
2. 40kA capability depends on applications rated up to 115$V_{RMS}$. 30kA applies if > 115 $V_{RMS}$.
3. 40kA capability depends on applications rated up to 123$V_{RMS}$. 30kA applies if > 123 $V_{RMS}$.
4. 40kA capability depends on applications rated up to 132$V_{RMS}$. 30kA applies if > 132 $V_{RMS}$.
5. 40kA capability depends on applications rated up to 97$V_{RMS}$. 30kA applies if > 97 $V_{RMS}$.

# DHB34 Varistor Series

## Power Dissipation Ratings

Should transients occur in rapid succession, the average power dissipation result is simply the energy (watt-seconds) per pulse times the number of pulses per second. The power so developed must be within the specifications shown on the Device Ratings and Specifications table for the specific device. The operating values must be derated as shown in Figure 1.

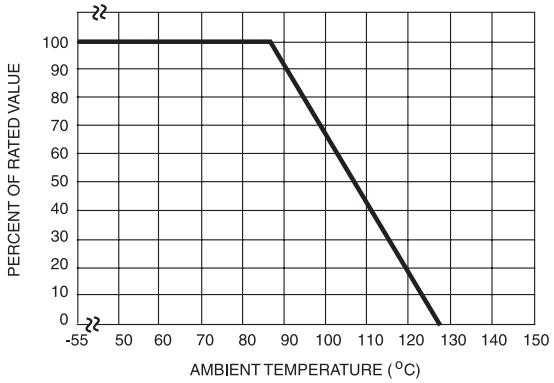
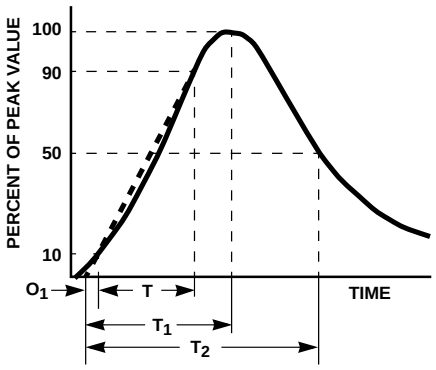



FIGURE 1. CURRENT, ENERGY AND POWER DERATING CURVE




$O_1$ = Virtual Origin of Wave
T = Time From 10% to 90% of Peak
$T_1$ = Virtual Front time = 1.25 • t
$T_2$ = Virtual Time to Half Value (Impulse Duration)
Example: For an 8/20µs Current Waveform:
8µs = $T_1$ = Virtual Front Time
20µs = $T_2$ = Virtual Time to Half Value

**FIGURE 2. PEAK PULSE CURRENT TEST WAVEFORM**

## Transient V-I Characteristics Curves

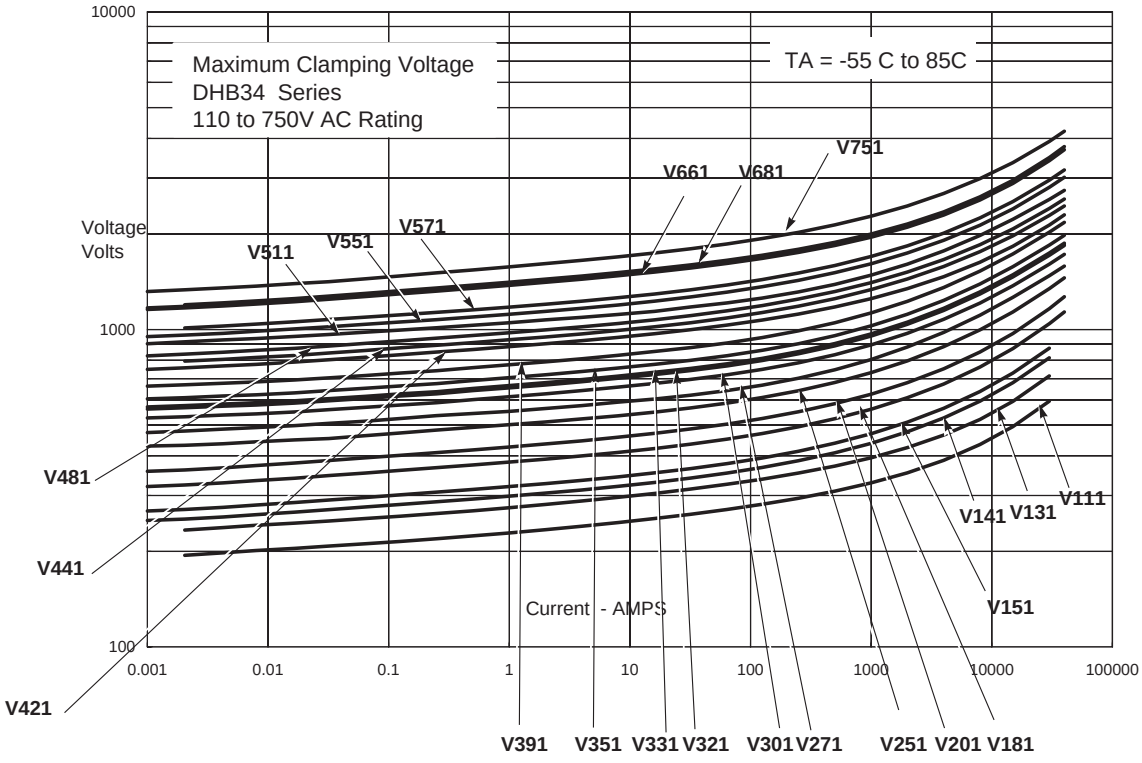



FIGURE 3. CLAMPING VOLTAGE FOR DHB34 SERIES

# DHB34 Varistor Series

## Pulse Rating Curves

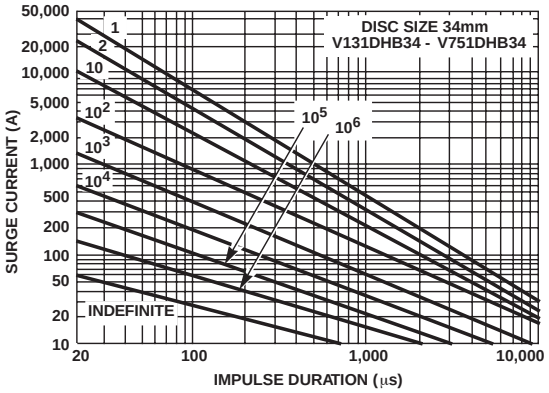
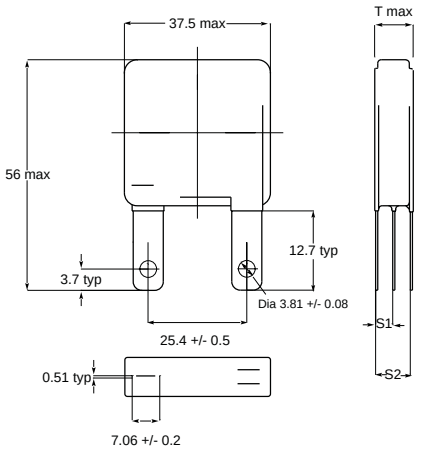



**FIGURE 4. SURGE CURRENT RATING CURVES FOR V131DHB34 - V751DHB34**

NOTE: If pulse ratings are exceeded, a shift of $V_{N(DC)}$ (at specified current) of more than ±10% could result. This type of shift, which normally results in a decrease of $V_{N(DC)}$, may result in the device not meeting the original published specifications, but it does not prevent the device from continuing to function, and to provide ample protection.

## Mechanical Dimensions

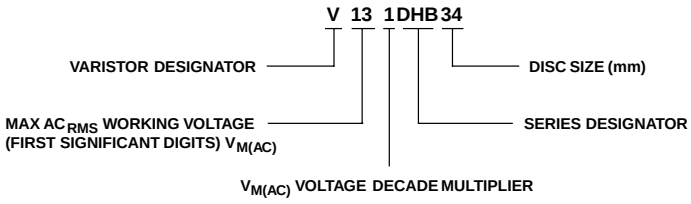



Terminals Configuration: Terminals A & B are connected to one varistor element. Terminals B & C connected to second varistor element.
Terminal materials: Tin Plated over copper.

**TABLE OF DIMENSIONS - THICKNESS AND TERMINAL OFFSETS**

| TYPE | T MAX | S1 +/- 1.15 mm | S2 +/- 2.30mm |
|---|---|---|---|
| V111DHB34 | 7.6 | 2.65 | 5.50 |
| V131DHB34 | 7.8 | 2.85 | 5.70 |
| V141DHB34 | 8.2 | 3.00 | 6.00 |
| V151DHB34 | 8.8 | 3.15 | 6.30 |
| V181DHB34 | 9.0 | 3.25 | 6.50 |
| V201DHB34 | 9.2 | 3.35 | 6.70 |
| V251DHB34 | 7.8 | 3.00 | 6.00 |
| V271DHB34 | 8.7 | 3.25 | 6.50 |
| V301DHB34 | 8.9 | 3.50 | 7.00 |
| V321DHB34 | 9.3 | 3.66 | 7.24 |
| V331DHB34 | 9.5 | 3.70 | 7.40 |
| V351DHB34 | 10.5 | 4.10 | 8.20 |
| V391DHB34 | 11.2 | 4.45 | 8.90 |
| V421DHB34 | 11.3 | 4.50 | 9.00 |
| V441DHB34 | 11.5 | 4.55 | 9.10 |
| V481DHB34 | 12.2 | 4.80 | 9.60 |
| V511DHB34 | 13.4 | 5.25 | 10.50 |
| V551DHB34 | 14.6 | 5.70 | 11.40 |
| V571DHB34 | 14.8 | 5.80 | 11.60 |
| V661DHB34 | 17.20 | 6.65 | 13.30 |
| V681DHB34 | 17.5 | 7.00 | 14.00 |
| V751DHB34 | 18.20 | 7.35 | 14.70 |

## Ordering Information


V 13 1DHB 34
VARISTOR DESIGNATOR
DISC SIZE (mm)
MAX AC RMS WORKING VOLTAGE (FIRST SIGNIFICANT DIGITS) V M(AC)
SERIES DESIGNATOR
V M(AC) VOLTAGE DECADE MULTIPLIER